



A CLINICAL STUDY OF MUTRASHMARI WSR TO UROLITHIASIS AND THE EFFECT OF ASHMABHEDANADI YOGA

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ABSTRACT

Mutrashmari was considered as one among the Astamahagadas by our Acharyas. It is one of the most important disease of Mutravaha sroto vikaras where both the medicinal and surgical treatments are advised and agreed upon by all the classical texts. In Contemporary sciences it is correlated with *urolithiasis* and now a days, due to food and life style variations it has become a global problem varying its incidence as per geographical distribution, sex and age group. Inspite of surgical intervention in large number of cases the disease has found its recurrence. For this constant efforts are being made to evolve an effective treatment as well as prevention of recurrence of Urinary calculi. In the present study an effort was made to find the efficacy of "*Ashmabhedanadi yoga*". In this study, 30 patients with diagnosis of *urolithiasis* were are randomly selected and given trial drug for 60 days. The subjects were asked for follow up once in fifteen days for consecutive 2 months. After completion of study the results were assessed basing on percentage of relief before and after treatment basing on symptomatic relief and *ultrasonography*. Statistically significant improvement was observed with P-value < 0.001. Hence the study revealed that the *Ashmabhedanadi yoga* is an effective drug in the management of *Mutrashmari*.

KEYWORDS: Mutrashmari, Ashmabhedanadi yoga, Urolithiasis. P value, Ultrasonography.

INTRODUCTION :

In the present era, persons are going away from the nature and inviting many diseases in the early stage of their life due to disturbed lifestyle and *Mutrashmari* is one of them considered as grave disease due to its ashraya in Marma sthana, involvement of bahu doshas etc. Acharya Charaka and Vaghbhatta had described *mutrashmari* under *mutrakrichra*¹. Epidemiological surveys have been previously reviewed showing that in economically developed countries the prevalence rate ranged between 4% - 20%.² In latter part of 20th century prevalence & incidence of upper urinary tract stones were still increasing in Western countries³. The incidence of urinary stone is very high ie, more than 30 people out of 10000 in Northern India. Between 120 & 140 per 1000,000 will develop urinary stones each year with male/female ratio of 3:1⁴. The incidence is still higher in the age group between 20-40 years.

Mutrashmari is a Tridoshaja vyadhi, where the vitiated vata dries up the Mutra so the kapha present in the mutra attains the form of Ashmari. The vishoshana of Mutra refers to reduction in the volume of urine, therefore the kapha present in mutra is superstatuated thus help in formation of Ashmari⁵. "*Urolithiasis*" is formation of urinary calculi at any level of the urinary tract⁶. Modern science has emphasized on various factors like hereditary, age, sex, metabolic disease, sedentary life style, hydration status, mineral contents of water, nutritional deficiency along with different theories like supersaturated solution, hyperparathyroidism, vit A deficiency etc. in relation to urinary stone formation. Now in this era, there are many treatments modalities like Extra corporeal Shock Wave Lithotripsy (ESWL), Percutaneous Nephro Lithotomy (PCNL), Dormia basket, ureteric meatomy etc. procedures which reduced the rate of open surgery in Urolithiasis. But these procedures are very costly and limited to urban areas only. Inspite of surgical intervention its recurrence rates are high. For this reason the present study was made on *Ashmabhedanadi yoga*, a herbo-mineral drug which contain many drugs like Sunti, Eranda Gokshura, Varuna, Pashanabhesha, Badarasma which had properties like Ashmarighna (Lithotriptic), Mutrakricchraha, Vedanahara, Shothahara, Vastishodhana. It has yielded encouraging result & hope that outcome of this study will form the guideline for the enthusiastic research workers for further advancement in this sphere.

AIMS & OBJECTIVES :

- To evaluate the efficacy of *Ashmabhedanadi yoga* in the management of *Mutrashmari*.
- To assess the effect of *Ashmabhedanadi yoga* on size, site and number of calculi before and after treatment.

MATERIAL & METHODS :

Materials:

• Source of data

30 patients of *Mutrashmari* are selected irrespective of sex, diet, occupation & religion between age group of 20 to 65 years from O.P.D., I.P.D. & cases

referred by other department of Dr B.R.K.R. Govt. Ayurvedic Medical College & Hospital, Hyderabad.

• Selection criteria :

Inclusive criteria :

- Age group between 20 to 65 years.
- Both sexes
- Radiological evidence of calculi (upto 9mm) in Kidney, Ureter, Urinary bladder.

Exclusive criteria:

- Patients with age below 20 and above 65 years.
- Renal disorders like Pyelonephritis, Acute Renal failure.
- Calculi of size more than 9mm.
- Patients with excessive hematuria.
- Pregnant and lactation

Diagnostic criteria:

- All the patients will be diagnosed on the basis of classical signs and symptoms of *Mutrashmari* and USG.

Investigations:

- Urine analysis
- Physical – Colour, PH, Specific gravity, Reaction, Sugar, Albumin.
- Microscopic- RBC, Casts and crystals, Epithelial and Pus cells.

Blood examination:

- Hb %, Total count, Differential count, ESR, RBS, Blood Urea, Serum Ca, Serum Creatinine.

Radiological study:

- Plain X-Ray.
- IVP (If needed)
- USG (Ultra sonographical study of Abdomen & Pelvis)

Methodology:

- Study design:** The present study is an open clinical trial. Informed consent was taken from all the patients before including them in the trial.

- Sample size:** Total 30 patients are randomly selected.

• Study plan:

- A special case Proforma was designed which consists of all the important data related to patients of *Mutrashmari*, treatment adopted & other information.

- Standard scorings were given for the subjective as well as objective parameters.

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ters for the assessment before & after treatment.

- The study was done in single group.
- All the 30 patients were administered Ashmabhedanadi yoga kashaya 30ml BID
- For fresh cases drug started immediately after the diagnosis confirmed.

TRIAL DRUG:

Materials for Ashmabhedanadi yoga

1. Pashanabherda	4.8 kg
2. Gokshura	
3. Varuna	
4. Sunti	
5. Erandapatra	
6. Badarashma/ Hazrulyahud bhasma – 1.2 kg	

All the above ingredients (1 to 5) are taken in equal quantities made kwatha churana, Badarashma is taken $\frac{1}{4}$ th of Pashanabherda and added to the above.

Dose :

30 ml BID Before Food.

Duration of study

Total duration of study was 60 days - 4 follow ups each on 15th, 30th, 45th and 60th day.

Table 1 : Pharmacodynamics of drugs of Ashmabhedanadi yoga^{7,8,9,10,11,12,13,14}

Name	Rasa	Guna	Virya	Vipaka
Sunti	Katu	Laghu, Snigdha	Ushna	Madhura
Erandapatra	Madhura	Snigdha, Tikshna, Sukshma	Ushna	Madhura
Pashanabherda	Kashaya, Tikta	Laghu, Snigdha, Tikshna	Seeta	Katu
Gokshura	Madhura	Guru, Snigdha	Seeta	Madhura
Varuna	Kashaya, Tikta	Laghu, Ruksha	Ushna	Katu
Badarashma			Seeta	

Most of the drugs mentioned above have the property of Kaphavatahara Rasa, Guna & virya and their by the drug shows its effect on ashmari.

METHOD OF ASSESSMENT OF TREATMENT

- The effect of the therapy was assessed pertaining to improvement recorded in clinical findings.
- Changes observed in signs & symptoms were assessed by adopting suitable scoring methods & objective signs by using appropriate clinical tools.
- Both subjective & objective assessments were done in all the patients before & after treatment. USG was done in all patient before treatment & after follow up period.
- Separate grading has been given for subjective parameters as follows:
1)Pain abdomen 2) Hematuria 3) Dysuria 4) Frequency of micturition

Above symptoms score was adopted depending upon severity for the assessment.

Assessment of subjective criteria :

Table 2 : Grading on Pain abdomen

Absence of pain abdomen	Grade 0 no Pain
Present, don't disturb routine	Grade 1 mild
Present, disturbs routine	Grade 2 moderate
Pt.rolls on bed due to pain	Grade 3 severe

Table 3 : Grading on Haematuria

Absence of RBC in urine	Grade 0
Presence of RBC in urine	Grade 1
More than 3-5 in urine	Grade 2
Plenty of RBC in urine	Grade 3

Table 4 : Grading on Dysuria

Absence of pain during voiding	Grade 0
Mild pain during voiding	Grade 1
Moderate pain during voiding	Grade 2
Severe pain during voiding	Grade 3

Table 5 : Grading on Frequency of Micturition

Micturition 1-3 times	Grade 0
Micturition 4-6 times	Grade 1
Micturition 7-9 times	Grade 2
Micturition > 9 times	Grade 3

Assessment of Objective Parameter (USG)

Table 6 : on the State of the stone

Size of the stone	Site	Number	Grade
0mm	Absence	0	0
1-3 mm	Moved to Bladder	1-2	1
4-6 mm	Moved to Ureter	3-4	2
7-9 mm	Kidney	4-5	3

CRITERIA FOR OVERALL RESULT ASSESSMENT :

<25% of relief in symptoms & size of stone.grade 3 (Poor)

In between 26% to 50% of relief in symptoms & size of stone. grade 2 (Mild)

>51%-75% of relief in symptoms and size grade 1 (Moderate)

>76-100 % of relief in symptoms and size grade 0 (Good)

OBSERVATIONS AND RESULTS

Table 7 : Distribution of calculi as per size of 30 Patients of Mutrashmari

S.No	Size of Stone	Before Trt	Percent	After Trt	Percent
1	1-3 mm	02	6.66	2	6.66
2	4-6 mm	14	46.66	11	36.66
3	7-9 mm	14	46.66	06	20

SIZE OF STONE

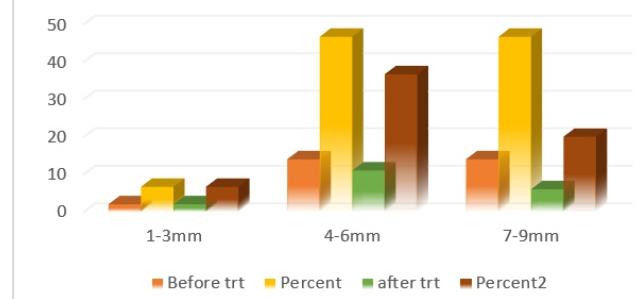


Table 8 : Showing the state of stone after treatment

S.no	State of stone (AT)	No.Of Patients	Percentage
1	Passed out	11	36.66
2	Reduced	12	40
3	No Change	07	23.33

STATE OF STONE

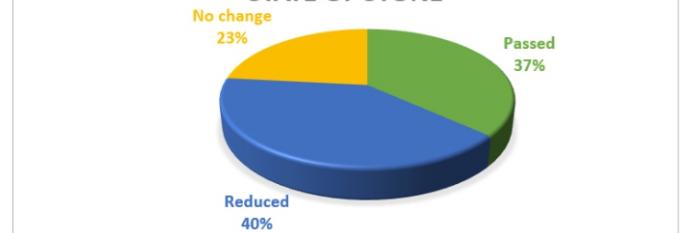
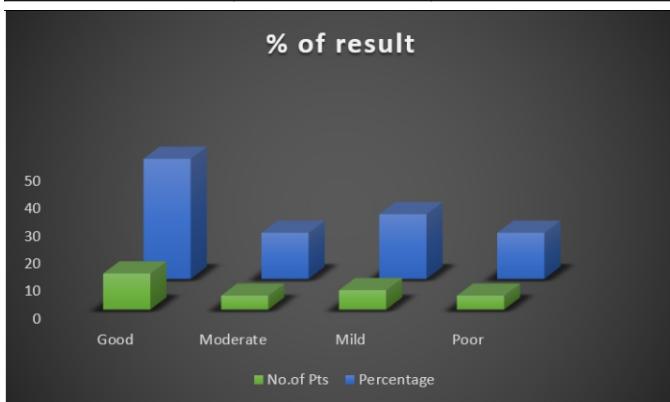


Table 9 : Showing the Over all result assessment of the study

Result assessment %	Gradings	Final result in No's & %
>76-100%	Good	13 or 43.3%
>51-75%	moderate	5 or 16.6%
>26-50%	Mild	7 or 23.3%
<25%	Poor	5 or 16.6%



Subjective Parameters :

Table 10 : Showing distribution of 30 Pts as per severity of Pain abdomen

S.no	Pain Abd	Before Trt	Percent	After Trt	Percent
1.	Severe	20	66.66	01	3.33
2.	Moderate	08	26.66	06	20
3.	Mild	02	6.66	02	6.66
4.	Absence	0	0	21	70

Table 11 : Showing response in Hematuria before & after treatment

S.No	Hematuria	Before Trt	Percent	After Trt	Percent
1	Absence	04	13.33	28	93.3
2	Presence	20	66.66	01	3.33
3	>3-5	04	13.33	01	3.33
4	PlentyRBC	02	6.66	0	0

Table 12 : Showing response in Dysuria before & after treatment

S.No	Dysuria	Before Trt	Percent	After Trt	Percent
1	Severe	14	46.66	02	6.66
2	Moderate	08	26.66	02	6.66
3	Mild	01	3.33	02	6.66
4	Absence	07	23.33	24	80

Table 13 : Showing the frequency of Micturition of 30 Patients before & after treatment

S.no	Fre of Mic	Before Trt	Percent	After Trt	Percent
1	>9 times	0	0	0	0
2	7-9 times	07	23.33	0	0
3	4-6 times	11	36.66	04	13.33
4	1-3 times	12	40	26	86.66

Table 14 : Distribution of calculi as per size of 30 Patients of Mutrashmari

S.No	Size of Stone	Before Trt	Percent	After Trt	Percent
1	1-3 mm	02	6.66	2	6.66
2	4-6 mm	14	46.66	11	36.66
3	7-9 mm	14	46.66	06	20

STATISTICS :

Table 15 : TOTAL EFFECT OF THERAPY^{15,16,17,18}

S. no	Symptoms	Mean		S.D		S.E		D.F	T value	P value	S
		BT	AT	BT	AT	BT	AT				
1.	Pain	2.6	0.5	0.6215	0.900	0.115	0.167	29	10.51	<0.001	E.S
2.	Hematuria	1.133	0.1	0.7303	0.4026	0.135	0.747	29	6.787	<0.001	E.S
3.	Dysuria	1.933	0.4	1.2015	0.8944	0.223	0.166	29	5.606	<0.001	E.S
4.	Fre.of Mic	0.833	0.133	0.7915	0.3051	0.146	0.056	29	4.473	<0.001	E.S
5.	Size of stone	6.3	3.733	2.002	3.3211	0.371	0.616	29	3.625	=0.001	V.S
6.	No. of stone	1.066	0.633	0.2537	0.4901	0.047	0.091	29	4.300	=0.000	E.S

S.D*-Standard Deviation

S.E*-Standard Error

D.F*-Degree of freedom

S*-Significance

E.S*-Extremely statistically significant

V.S*-Very statistically significant

PROBABLE MODE OF ACTION :

Mutrashmari is a disease which occurs due to Tridosha vitiation among them Kaphadosha is the main factor, which contribute nucleus role for the pathogenesis. It is also known fact, that when the urine becomes stagnated in the urinary bladder for long time, it gets concentrated and infected. Thus there is more chance of calculi formation. For that the motto of the treatment should be Kaphahara, Bhedhana, Mootrala and Ashmarighna, Vatanulomana, Vedana sthapana.

The formulation Ashmabhedanadi yoga taken for the study is indicated in Ashmari roga by the ancient Acharyas contains the drugs like Sunti, Eranda, Pashanabhedha, Gokshura, Varuna & Hazralyahud Bhasma having the anti urolithic property.

Along with the drug the subjects were given the Pathya-apathyha chart which plays has a major role in the treatment of the disease.

So, in total the compound have the actions like Lekhana, Kaphavata shamaka, Mutrala, Mutra virechaniya, Vedanahara, Mutrakrichcharama and Vastishodhana properties. Because of these which are acting as the diuretics (production of more urine, excretion of more urine, flushing out all the doshas disease causing factors like decreasing the formation and saturation of the urine, restoring the optimum crystalloid-colloid ratio and finally inhibit nucleation and calculi formation. This may also flush the already existing calculi, and also decrease dysuria and burning micturition. May be due to this reason many patients have noticed increased flow, frequency and volume of urine during the treatment and got relief from dysuria and burning micturition.

Thus in total this formulation has the capacity to disintegrate the pathogenesis of the disease

“Ashmari” and due to its diuretic action it flushes out the disintegrated ashmari by the process of diuresis.

CONCLUSION :

On completion of this study, final conclusion drawn on the basis of deductive reasoning of data obtained from this clinical trial is as follows

- *Mutrashmari* is considered as urolithiasis in the present study. It is a lifestyle disorder involving *tridoshas* and mainly *vatakapha*..
- *Mutrashmari* is more prevalent in 20-40 years, in people having the foods like tomato, spinach and others substances like incompatible, acidic, constipating, heavy and distending items of food.
- *Suppression of natural urges* is also one of the cause observed in most of the cases.
- Sheding light on the symptomatology of the disease on the basis of *Ayurvedic* fundamentals it is evident that *Vata Kapha Dosha* is the chief culprit, where kapha is samavayi karana of Ashmari, because the property of prithvi tatwa in it, help in hardening of ashmari and kapha here can be referred to solutes present in the urine. In the present trial, *Ashmabhedanadi Yoga* was found more effective.
- The present study by *Ashmabhedanadi Yoga* showed extremely statistically significant results (P<0.001) in Pain abdomen, Dysuria, Hematuria, Frequency of micturition.
- Extremely statistically significant results (P<0.001) was also seen in no.of stones expelled/reduced.

- Diet and life style modifications play a major role in the management and prevention of the disease.
- Drugs have antiulithic, anti pyretic, alkalinizing, diuretic properties helps in relieving the disease.
- No major hazardous side effects are noticed during the present study. So, it can be said to be a safer drug.
- During follow up study, some patients complained of increase in grade of symptoms after discontinuation of therapy. It shows that therapy should be administered for longer duration & then analysis should be done.

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